

# Evolution of U.S. Strategic Bombing of Urban Areas

By  
CONRAD C. CRANE\*

Dear Hap:

Last month my son Ted won his wings at Randolph Field. He is now going through a bombardment school, and in a short time expects to go to the front.

Will you tell me—has he become what our enemies call him, "A Hooligan of the Air?" Is he expected to scatter death on men, women, children—to wreck churches and shrines—to be a slaughterer, not a fighting man? . . .

I remember so well when you and Frank Lahm, and Tommy Milling won your wings. We all thought it was a new day in chivalry, bravery, manhood. What do Air Force wings mean today? In winning his wings, has Ted lost his spurs? Please tell me.<sup>1</sup>

**T**HIS letter from a concerned mother in Massachusetts in May 1943 to General Henry H. Arnold, Army Air Forces chief of staff, raised questions about the role of American strategic bombing in World War II—questions that historians are still debating. During the war, the United States Army Air Forces (AAF) enunciated a policy of avoiding indiscriminate attacks on population centers in favor of pinpoint assaults on industrial or military targets. This seems to differentiate U.S. policy from that of Germany, Great Britain and Japan, all of which resorted to intentional terror attacks on enemy cities throughout the war.<sup>2</sup> Scholars who have cited the official AAF history emphasize the intention of American leaders

\*The author holds the rank of Major in the U.S. Army and is the Military Historian for the Combined Arms and Tactics Department of the U.S. Army Air Defense Artillery School at Fort Bliss, Texas. He just completed a tour as an Assistant Professor of History at the U.S. Military Academy at West Point.

<sup>1</sup>Letter from Mrs. Katharine A. Hooper to Henry H. Arnold, "Humanitarian Aspects of Airpower" Binder, Box 9A, Papers of Frederick L. Anderson, Hoover Institution on War, Revolution and Peace at Stanford University.

<sup>2</sup>Wesley Frank Craven and James Lea Cate, eds., *The Army Air Forces in World War II*, 7 vols. (Chicago, 1948), 1: 78, 95.

## Strategic Bombing

to resist bombing noncombatants in Europe, both for moral and strategic reasons.<sup>3</sup> U.S. airmen regarded civilian casualties as an unintentional and regrettable side effect of bombs dropped on military or industrial objectives; in contrast, the intention of the Royal Air Force campaign was to destroy the cities themselves and kill or dislocate their inhabitants.<sup>4</sup>

British writers have for some time criticized the claimed ethical superiority of AAF strategic bombing,<sup>5</sup> and recently American scholars such as Ronald Schaffer and Michael Sherry have expressed similar objections. In a 1980 article, Schaffer examines the statements of AAF leaders as well as numerous wartime bombing documents in Europe and concludes that ethical codes "did little to discourage air attacks on German civilians." In fact, "official policy against indiscriminate bombing was so broadly interpreted and so frequently breached as to become almost meaningless." He argues that both the policy against terror bombing and ethical support for that policy among AAF leaders were "myths." In his recent study which also examines strategic bombing in the Pacific, Schaffer examines the issue in even more detail and concludes that while "virtually every major figure concerned with American bombing expressed some views about the moral issue . . . moral constraints almost invariably bowed to what people described as military necessity," another disputed concept.<sup>6</sup> Sherry deals primarily with the American firebombing of Japan, which he sees as a result of a prewar willingness to kill civilians. Strategists adopted this policy after precision bombing against military and industrial

<sup>3</sup>Ibid. 3: 638, 733. Scholars who have agreed with the official history include Kent Roberts Greenfield, *American Strategy in World War II: A Reconsideration* (1963; reprint, Brooklyn, N.Y., 1979) and Russell F. Weigley, *The American Way of War* (Bloomington, Ill., 1977).

<sup>4</sup>F. M. Sallagar, *The Road to Total War: Escalation in World War II* (Santa Monica, Calif., 1969), 182. Most recently, John Keegan has contrasted the superior "moral scruple" of AAF policies with those of the RAF in his article "We wanted beady-eyed guys just absolutely holding the course," *Smithsonian* 14 (August 1983): 34-43.

<sup>5</sup>A good example of the British position is Max Hastings, *Bomber Command* (New York, 1979), 124, who calls the American interpretation "moral hairsplitting." In fairness to the British, it should be noted that there were differences of opinion within the British government on the issue of bombing strategy, and significant criticism of urban area attacks from elements such as the clergy.

<sup>6</sup>Ronald Schaffer, "American Military Ethics in World War II: The Bombing of German Civilians," *The Journal of American History* 67 (September 1980): 319; Schaffer, *Wings of Judgment: American Bombing in World War II* (New York, 1985), xii.

## The Historian

What do you do (X) if it doesn't work in the war?  
is it inevitable?

targets proved only marginally effective in 1944. Firebombing became the inadvertent but inevitable product of an anonymous "technological fanaticism" of Allied bombing. The American press accepted such measures as retribution for war crimes or as preparation for invasion. The decision to firebomb, like that to drop the atomic bomb, may have been made on the assumption that using everything available would lead to eventual victory.<sup>7</sup>

There are elements of truth in both arguments, but also inaccuracies. Morale and terror attacks did have a place in AAF strategy, though only as part of a vaguely defined final blow to end the war. Contrary to Schaffer's conclusions, an examination of the record indicates a fairly consistent American policy against indiscriminate bombing in Europe, especially when compared with the practices of the RAF Bomber Command, although World War II technology never allowed AAF operational policy to match stated claims. Technological limitations also influenced the British campaign. Aircraft capabilities and German countermeasures made early RAF daylight precision attacks unprofitable, but public pressure demanded that the RAF strike back at Germany. Night raids on urban areas seemed the only viable alternative. While General Arnold and many on his staff in Washington maintained an "open mind" about such terror attacks,<sup>8</sup> field commanders almost always considered civilian casualties a by-product rather than a goal of bombing. They viewed terror bombing as ineffective or unpopular with the American public, while morality constituted a key concern for some leaders and planners. The primary objective was to win the war with the most efficient use of resources and the fewest possible American casualties. Mission requirements usually prevented any sense of morality from being "an overriding criterion" on aerial operations, although one planner stated that his group "took some comfort that our proposals would be much less costly

<sup>7</sup>Michael Sherry, "The Slide to Total War," *The New Republic*, 16 December 1981, 24-25. Sherry has also just published a comprehensive book, *The Rise of American Air Power: The Creation of Armageddon* (New Haven, 1987), that further explains his position.

<sup>8</sup>The most current and one of the most sympathetic explanations of the evolution of RAF bombing strategy is in John Terraine, *A Time for Courage* (New York, 1985). If the long-range escort fighters that facilitated American strategy had existed in 1939, the British campaign might have developed differently; General Laurence S. Kuter to General Frederick L. Anderson, 8 August 1944, File 145, 161-67, April 1944 to May 1945, Miscellaneous Correspondence of Anderson and Kuter, Alfred F. Simpson Historical Research Center [SHRC], Maxwell Air Force Base [AFB], Alabama.

## Strategic Bombing

in terms of the lives of civilians."<sup>9</sup> The need for Allied cooperation also tended to mute ethical arguments because the British so strongly supported morale attacks and the Americans did not want to cause a rift or aid German propaganda. While it is difficult to differentiate between moral positions and official records and correspondence, ethical restraints were probably not the most important reason for limiting United States Strategic Air Forces terror bombing. Nevertheless, the role of such considerations should not be discounted.

\*

One cannot deny that a significant shift in American policy occurred during the war. In 1939 President Roosevelt pleaded with belligerents to refrain from the "inhuman barbarism [of] bombardment from the air of civilian populations or of unfortified cities," but by 1945 *Impact* magazine, published by the assistant chief of air staff, Intelligence, stated U.S. objectives in the incendiary bombing of Japan "basically . . . were the same as those of British area bombing."<sup>10</sup> However AAF operations in the Pacific differed from those in Europe. Less allegiance was given to restrictions against attacks on civilians during the strategic air campaign against Japan, but this did not stem from any prewar inclination to kill Japanese civilians. As in the European theater, the primary bombing objective remained the destruction of the enemy's military and industrial capacity. Beliefs and practices that had evolved in the war against Germany, combined with different perceptions of Japanese society and severe operational limitations, produced the fire raids. Michael Sherry is correct in seeing the decision to drop the A-bomb as a natural product of the evolution in American strategic bombing, but he does not give adequate credit to wartime exigencies in that development process. Also neither he nor Schaffer deals in much detail with the reaction of the public to these allegedly immoral acts of total war, or tries to explain why few citizens wrote letters such as the one from the Massachusetts mother to General Arnold. Public opinion constituted another ingredient in the formula that produced AAF bombing theory, and the public's acquiescence can be just as revealing as resistance. Understanding this air power equation is essential in order to gain a clear picture of the evolution of American air warfare in World

<sup>9</sup>W. W. Rostow, *Pre-Invasion Bombing Strategy* (Austin, Tex., 1981), 40-42.

<sup>10</sup>Department of State, *Foreign Relations of the United States*, 1939, 1:542; "Fire Blitz: Progress Report on the Incendiary Bombing of Japan," *Impact*, August 1945, 19.

War II, along with what seems to be an increasing acceptance of civilian casualties as a result of strategic bombing.

A progression of theorists influenced the development of American air doctrine before the war. Giulio Douhet, an Italian often called the “Father of Airpower Doctrine,” viewed the airplane as an invincible weapon capable of shattering civilian morale by the indiscriminate bombardment of cities.<sup>11</sup> “Billy” Mitchell may have incorporated some of Douhet’s ideas, but he tailored his concepts to the American situation. He considered cities attractive targets which did not have to be destroyed, just disrupted. “It will be sufficient,” he wrote, “to have the civilian population driven out so they [sic] cannot carry on their usual vocations. A few gas bombs will do that.”<sup>12</sup>

By 1923 Army Air Corps schools had access to Douhet’s writings but they did not widely accept his theories on mass area bombing of civilians.<sup>13</sup> Air Corps maneuvers in 1929 impressed observers with the “invincibility of the bomber” and accurate daylight bombardment began to receive increased emphasis.<sup>14</sup> Many factors combined to produce a precision bombing doctrine: public opposition to mass civilian bombings, intense congressional debates on the legality of aerial bombardment, a traditional American respect for marksmanship dating back to frontier days; technological developments such as accurate bomb-sights and the B-17; and the belief that bombardment of specific industrial targets constituted the most effective and economical way to wage war. Daylight was essential for accuracy, just as high altitude and tight formations were essential for defense. In short, moral, legal, cultural, technical, strategic and tactical reasons shaped the theory and tactics of precision industrial bombing in the 1930s.<sup>15</sup>

Other air forces of that period did not espouse the precision doctrine, and terror attacks occurred in China, Ethiopia and

<sup>11</sup>Edward Warner, “Douhet, Mitchell, Seversky: Theories of Air Warfare,” in *Makers of Modern Strategy*, ed. Edward Mead Earle (Princeton, 1941), 489-91.

<sup>12</sup>Ibid., 498-500; Major Perry M. Smith, “Douhet and Mitchell: Some Reappraisals,” *Air University Review* 18 (September-October 1967): 98-99.

<sup>13</sup>Robert F. Futrell, *Ideas, Concepts, Doctrine* (New York, 1980), 22; Smith, “Douhet and Mitchell,” 99-100. This is contrary to Schaffer’s contention that Douhet had particular influence on AAF teachings.

<sup>14</sup>Futrell, *Ideas, Concepts, Doctrine*, 33.

<sup>15</sup>Thomas H. Greer, *The Development of Air Doctrine in the Army Air Arm, 1917-1941*, USAF Historical Studies No. 89 (Maxwell AFB, Ala., 1957), 57-58. There is another good discussion in vol. 1 of Craven and Cate, *Army Air Forces in World War II*. It was also easier to get appropriations for an air force that could serve as an accurate, long-range coastal artillery to pick off enemy ships.

Spain. The League of Nations and the U.S. government condemned such acts as “contrary to principles of law and humanity.” The attacks led to public outrage and American newspaper editors cried that the “laws of war are becoming just scraps of paper.”<sup>16</sup> Military strategists questioned the value of these terror tactics, noting that they tended to harden civilian resolution, nurture hatred and often led to reprisals and destruction of the attackers’ cities.<sup>17</sup>

After Mitchell’s death in 1936, emigré aircraft designer Alexander P. de Seversky became the dominant theorist. Because civilians did not panic under air bombardment, Seversky concluded that precision bombing of carefully selected targets must replace indiscriminate bombing of cities. He based his reasoning more on efficiency than morality. “The will to resist can be broken in a people,” he argued, “only by destroying effectively the essentials of their lives—the supply of food, shelter, light, water, sanitation, and the rest.” Morale could be a target without the indiscriminate slaughter of civilians.<sup>18</sup> His ideas widely circulated among Air Force officers and in numerous journals. Walt Disney even made Seversky’s influential book, *Victory Through Air Power* (1942) into a movie.<sup>19</sup>

In August 1941, with U.S. involvement in World War II imminent, American Air Force leaders in the Air War Plans Division drew up guidelines in a key document, “Munitions Requirements of the AAF for the Defeat of our Potential Enemies,” known as AWPD/1. The plan, which influenced operations throughout the war, accepted the “Germany First” policy of overall strategic direction and adhered to the precision bombing doctrine. German power, transportation and oil industries became

<sup>16</sup>P. W. Wilson, “Are Laws of War Scraps of Paper?” *New York Times*, 3 October 1937, sec. 4e.

<sup>17</sup>Hilton P. Goss, *Civilian Morale Under Aerial Bombardment, 1914-1939* (Maxwell AFB, Ala., 1948), 253.

<sup>18</sup>Major Alexander P. de Seversky, *Victory Through Air Power* (Garden City, N.Y., 1943), 145-47. Though Seversky was a keen observer of the lessons of modern aerial warfare in Spain and early World War II, he was also a former Russian naval officer who was strongly influenced by the seapower ideas of Mahan. Civilian morale was not a direct objective, but would be affected by the results of an aerial blockade of the enemy homeland which precision bombing made possible. See Robert F. Futrell, “Commentary,” in *Command and Commanders in Modern Warfare*, ed. Lt. Col. William Geffen (Colorado Springs, Colo., 1969), 313.

<sup>19</sup>Letter from Seversky to Anderson, 7 September 1943, Box 9A, Anderson Papers. The film, “designed to educate people on new concepts of air power,” served to expose the American and British public to Seversky’s views on strategic bombing doctrine.

the main target objectives. Area bombing of civilian concentrations would only commence as a final blow when German morale began to crack. The plan did not define whether this would be a single assault or a series of attacks.<sup>20</sup> Leaders sanctioned this one-time exception to general policy on the grounds that it would save lives on both sides by ending the war. Late in the war this concept of an aerial *Todesstoss* (death blow) would prove a potent lure for American leaders and help sanction the use of the atomic bomb.<sup>21</sup>

\*

Pearl Harbor transformed American public opinion about terror attacks on civilians. A poll on December 10, 1941, revealed that sixty-seven percent of the population favored unqualified and indiscriminate bombing of Japanese cities, while only ten percent gave an outright "no."<sup>22</sup> The same justification of "tit for tat" that motivated earlier *Luftwaffe* and RAF raids on London and Berlin seemed to be evident here.<sup>23</sup> Subsequent surveys produced similar results. A vast majority of Americans favored urban bombing even if it brought Axis retaliation.<sup>24</sup> This implied a deep commitment or resignation to total warfare and reflected the intense anxiety about a war that appeared to be going so disastrously.

The only significant flurry of U.S. protest against strategic bombing came in response to a pamphlet, "Massacre by Bombing," written by an English citizen, Vera Brittain, and published in America by the Fellowship of Reconciliation, a small pacifist group. When the *New York Times* reprinted excerpts along with an introductory petition signed by twenty-eight prominent clergymen, educators and professionals in the spring of 1944, reaction was intense. The public condemned Brittain in

<sup>20</sup>"Army and Navy Estimate of United States Overall Production Requirements," 11 September 1941, AWPD/1, TAB 2, Section 2, Part 3, App. 2, p. 2, Joint Army-Navy Board File 355, Serial 707, Record Group [RG]225, National Archives. Page 6 does say that when the "proper psychological conditions" for an attack on morale exist, "the entire bombing effort might be applied toward this purpose."

<sup>21</sup>Sallagar, *Road to Total War*, 187, 233.

<sup>22</sup>Hadley Cantril and Mildred Strunk, eds., *Public Opinion, 1935-1946* (Princeton, 1951), 1067.

<sup>23</sup>Sallagar, *Road to Total War*, 205-209.

<sup>24</sup>Cantril and Strunk, *Public Opinion*, 1067. For religious reasons, most Americans expressed resistance to bombing Rome, but by early 1944 three-quarters of those polled approved bombing historic religious buildings and shrines if military leaders believed such attacks were necessary.

over two hundred articles and the *New York Times* reported receiving letters at a fifty-to-one ratio against her.<sup>25</sup> Most letters agreed with author MacKinlay Kantor who deplored the "soft-heartedness" of those who worry about "... socking the rapacious German nation with every pound of high explosives available." A rabbi declared that "The Germans must reap the fruits of their own wicked deeds." Other clergy echoed his sentiments, citing Nazi precedents as the final justification for American bombing. Editorial comment in general disclaimed moral questions and recognized the raids as a "revolting necessity." Even more acidic comments towards the Japanese reflected racial and cultural bias.<sup>26</sup>

These reactions, which ranged between avid support and resigned acceptance, probably represented the majority of public opinion on killing enemy civilians. The average American may not have been aware of the extent of the destruction bombing wreaked on cities; posters depicted Allied bombers attacking factories instead of people, and periodicals described B-17s dropping explosives down industrial smokestacks. Even if they had known the exact results of bombing, it would not have made much difference. Most American families had experienced the deaths of loved ones, friends or neighbors; if bombing enemy civilians would speed victory and save American lives it had to be done.

The belief that the AAF avoided indiscriminate killing of civilians whenever possible comforted many Americans. In turn, AAF leaders perceived a public opinion in line with the position of publications like the *New Republic*, which stated that it did not approve of terror bombing but added that, to the best of its knowledge, most bombardment was directed at military objectives.<sup>27</sup> A subtle, important interaction existed between public perceptions of American strategic bombing and the attitudes of the leaders carrying it out. Air Force planners interpreted public opinion as favoring precision attacks on industrial and military targets without indiscriminate civilian casualties. Military reports and news releases designed to demonstrate the accuracy and effectiveness of pinpoint bombardment in turn shaped public attitude.

\*

<sup>25</sup>Lawrence S. Wittner, *Rebels Against War: The American Peace Movement, 1941-1960* (New York, 1969), 59.

<sup>26</sup>George E. Hopkins, "Bombing and the American Conscience During World War II," *The Historian* 28 (May 1966): 467-71.

<sup>27</sup>*Ibid.* Hopkins argues that the average American would have denied acquiescence in any killing or terrorizing of women and children.

Government decisions in war might be limited by the perceived tolerance of public opinion, but at least some leaders privately opposed the intentional killing of enemy noncombatants. Secretary of War Henry L. Stimson represented a school of thought repulsed by the barbarism of indiscriminate attacks on civilians. He had been instrumental in U.S. government protests against such raids during the 1930s and tried to keep a close watch on American strategic air operations during World War II. Stimson's diary is filled with references to atrocities and war crimes and the conviction that the Nazi leaders and secret police, not the German people, caused the war.<sup>28</sup> Reports of the fire raids against Japan evoked a strong reaction; Stimson felt he had been misled by Lovett, assistant secretary of war for air, and AAF leaders who had promised to restrict operations there to "the precision bombing which it (the AAF) has done so well in Europe." He explained, "I am told it is possible and adequate. The reputation of the United States for fair play and humanitarianism is the world's biggest asset for peace in the coming decades."<sup>29</sup> Discussing the topic later with President Truman, Stimson realized the validity of Air Force arguments that the omnipresence of Japanese industry made it difficult to prevent area bombing, but he "did not want to have the United States get the reputation of outdoing Hitler in atrocities." He often agonized over signing orders for bombing raids and wondered about the lack of public protest.<sup>30</sup>

Although ethical considerations often did not limit other leaders, command pressure from Stimson, fear of hostile public opinion or belief in the inefficiency of area bombardment sometimes served the same purpose; all three at one time or another had an impact on the AAF chief of staff. In 1941 Arnold wrote in a book he co-authored with Colonel Ira C. Eaker that "bombing attacks on civil populace are uneconomical and unwise" because "bombers in far larger numbers than are available today will be required for wiping out people in sufficient numbers to break the will of a whole nation."<sup>31</sup> Arnold kept his options for future

<sup>28</sup>The same sentiment motivated many of those critics of strategic bombing, such as Dwight MacDonald, who concluded that workers in Berlin were no more evil than the American airmen ordered to bomb them. Dwight MacDonald, *Memoirs of a Revolutionist* (New York, 1957), 76-77.

<sup>29</sup>Henry L. Stimson Diary, 6 May 1945, Yale University Library, microfilm edition, reel 9.

<sup>30</sup>Ibid., 6 June 1945. Noam Chomsky, *American Power and the New Mandarins* (New York, 1969), 167.

<sup>31</sup>Maj. Gen. H. H. Arnold and Col. Ira C. Eaker, *Winged Warfare* (New York, 1941), 133-34.

civilian bombardment open, and his memoirs reveal even more flexibility on this subject. The damage a relatively small number of *Luftwaffe* bombers caused London impressed him and he envisioned great results from larger fleets of American planes. The idea of pilotless flying bombs like the German V-1s also fascinated him and he considered abandoning strategic bombers in favor of much cheaper radio-controlled "Bugs," remotely piloted craft capable of dropping bombs on the enemy.<sup>32</sup>

In public Arnold called terror bombing "abhorrent to our humanity, our sense of decency," a policy he did not believe in.<sup>33</sup> In private he told his air staff that "this is a brutal war and . . . the way to stop the killing of civilians is to cause so much damage and destruction and death that the civilians will demand that their government cease fighting." He added, however, "This doesn't mean that we are making civilians or civilian institutions a war objective, but we cannot 'pull our punches' because some of them may get killed."<sup>34</sup> In order to support his desire for a postwar independent air service he had to maintain the proper public image, but he also needed impressive results to prove the effectiveness of air power. His main goal was to make the largest possible contribution to winning the war, and to ensure that the AAF received credit for it through proper publicity. His pressure for more raids despite bad weather led to increased use of less accurate radar-directed bombardments in Europe, and his demand for increased efficiency in Japan inspired the resort to fire raids. Arnold also liked to glean ideas from the minds of experts; gadgets and "hot ideas" fascinated him. He commented favorably on plans to bomb volcanoes around Tokyo and schools of fish off Japan, and he wanted to retaliate for German booby traps in North Africa by dropping explosive devices in fountain pens and pocketbooks onto German territory. There seemed to be little consideration for ethics in most of Arnold's decisions, but he did espouse the traditional moral position of airpower theory which claimed that bombing would cost fewer lives than land warfare and end the war more quickly.<sup>35</sup>

<sup>32</sup>Arnold, *Global Mission* (New York, 1949), 227, 260-61.

<sup>33</sup>Arnold, "Precision Blows for Victory: A Report to the Nation," text of undelivered speech scheduled for Soldiers Field Stadium, Chicago, on May 16, 1943, Box 9A, Anderson Papers.

<sup>34</sup>T. J. Hanley Jr. to Assistant Chiefs of Air Staff, Personnel, et al., 30 April 1943, File 385, Box 114, Henry H. Arnold papers, LC.

<sup>35</sup>Schaffer, "American Military Ethics," 333. "Report on Suggestion for Bombing Japanese Volcanoes," 21 May 1942, President Folder, Box 45, and letter with documents, Maj. Gen. V. E. Bertrandias to Arnold, 4 June 1945, File 385, Japan, Box 115, Arnold Papers, Schaffer, *Wings of Judgment*, 16, 61-62.

The policies of General Carl Spaatz, commander of the United States Strategic Air Forces (USSTAF) and an officer most historians credit with continuing to raise the moral issue in opposition to British attempts to enlist American participation in terror attacks, fell somewhere between the positions of Stimson and Arnold. He did express fear of an ethical backlash when he stated to Arnold, "There is no doubt in my mind that the RAF want very much to have the U.S. Air Forces tarred with the morale bombing aftermath which we feel will be terrific." Yet in a questionable interview in 1962 he said, "It wasn't for religious or moral reasons that I didn't go along with urban area bombing."<sup>36</sup> Nonetheless, his resistance to terror attacks provided an important limiting factor, whatever its motivation.

Many of Spaatz's subordinates shared his view, believing that both ethics and efficiency justified precision bombing. Major General Frederick L. Anderson, eventually USSTAF deputy commander for operations, was one of the AAF's leading bombardment experts before the war and a staunch advocate of precision bombing.<sup>37</sup> When Spaatz showed him the Massachusetts mother's letter, Anderson replied that air warfare only differed from more traditional forms in its massive potential for destruction. "Law cannot limit what physics makes possible," he wrote. "We can depend for moderation only upon reason and humane instincts when we exercise such a power." He pointed out that "the precision which is the keynote of America" was more efficient than terror bombing, and at the same time more humane. By allowing reason and humanity to curb the "bestial instincts" released by "the awful weapon at our disposal," the AAF showed "that humanity pays and that Air Power is the most powerful urge for peace."<sup>38</sup>

<sup>36</sup>Spaatz to Arnold, 27 August 1944, Personal Diary, August 1944, Box 15, Carl Spaatz Papers, LC; Spaatz interview with Noel Parrish and Alfred Goldberg, 21 February 1962, USAF Oral History Program K239.0512-754, Office of Air Force History, Washington. Some of Spaatz's recollections do not match diary entries, most notably those concerning firebombing and the atomic bomb. For example, while in the interview he says that he had "no attitude" toward the firebombing of Japan, the passage in his diary for August 11, 1945 expresses strong disfavor.

<sup>37</sup>It is revealing that Anderson would not criticize the RAF Bomber Command campaign, writing that "Odius [sic] and public comparison of the methods of our respective forces can be of no value except to the enemy. . . . We cannot cooperate with reservation." This quote came from the letter discussed in the next paragraph. AAF leaders also felt that RAF training and equipment were only suitable for night area attacks.

<sup>38</sup>Suggested Reply to Letter Questioning Humanitarian Aspects of Air Force, Humanitarian Aspects of Air-power Binder, Box 9A, Anderson Papers. This letter

Anderson wrote another letter which illuminated additional aspects of the American position on strategic bombing. In replying to Sir Charles Portal, Britain's chief of air staff, about undesirable civilian casualties from attacks on targets in enemy-occupied countries, Anderson admitted the imperfection of precision bombing and resultant incidental casualties. He agreed with Portal's contention that the Allies had to do everything possible to avoid unnecessary civilian casualties and to limit objectives in occupied countries to key factors in Axis strategy, but differed with his view in regard to the status of workers. Anderson considered all civilians employed "willingly or otherwise" in Axis industry as assisting the enemy and thought they should accept the risks "which must be the lot of any individual who participates directly in the war effort of a belligerent nation."<sup>39</sup> This policy applied to German workers as well as French, and showed a consistency in thought independent of any political considerations. Axis employees were no longer viewed as noncombatants, an important step in escalation to total war. Yet it must be noted that this combatant status applied only to workers in factories being bombed; the AAF strategic campaign, unlike that of the RAF, did not aim to kill laborers in their homes.

\*

In order to get a true picture of American strategic bombing policy, it is important to examine its aerial operations. Schaffer claims that radar bombing, special operations like Thunderclap and Clarion, assaults on marshalling yards and transportation targets, and "war-weary" bomber projects all exemplified indiscriminate bombing. It is important to differentiate, however, between the intent of American tactics and the actual effect. A closer look at these examples shows much more restraint than Schaffer would admit.

This is especially evident in the use of "non-visual" navigation to bomb through European cloud cover, a practice Schaffer calls "tantamount to urban area attacks."<sup>40</sup> Such methods employed devices ranging from radio direction finders to radar sets that enabled bombardiers to identify targets on the ground. Planners realized that these techniques involved some compromise with precision tactics and required a careful choice of targets. At first

contains no signature, but it appears that Anderson sent it to Spaatz as a recommended answer to Mrs. Hooper's concerns.

<sup>39</sup>Draft of letter from Anderson to Portal, *ibid.*

<sup>40</sup>Schaffer, "American Military Ethics," 322.

they selected objectives in city areas on coastlines or estuaries because of the verifiable distinction between water and land on radar screens. The technique allowed a large increase in raids during the testing period in late 1943 and early 1944, and thereby relieved much of the intense pressure Arnold applied for maximum bombing.<sup>41</sup>

The first non-visual mission on Wilhelmshaven in October 1943 proved a resounding success, and in December the Eighth Air Force announced the "development of a new day bombardment technique employing latest scientific devices enabling bombing through solid cloud cover." It added:

While accuracy is not equal to that usually attained in high altitude attacks when the target can be seen, . . . accuracy is satisfactory and gives promise of improvement. It was explained that the new technique is regarded as a logical outgrowth of American bombardment doctrine made possible by scientific advances and does not involve any basic change in the American conception of bombardment.<sup>42</sup>

It can be assumed that a public which seldom questioned such military pronouncements accepted this position, which also seemed to represent USSTAF beliefs accurately. The first missions on recognizable docks and shipyards in cities like Wilhelmshaven and Kiel served to encourage believers in radar bombing and to convert doubters, but the early successes turned out to be beginner's luck. They "gave an unfounded hope of potential accuracy; and it may therefore have contributed to an unfortunate tendency to treat H2X (radar) as a rival of visual bombing rather than a supplement to it." It may also have helped to make the Eighth Air Force complacent about the increased rate of operations which the new equipment made possible through the winter. By early 1944 it became evident that new training and equipment would be necessary to achieve acceptable accuracy.<sup>43</sup>

In the last quarter of 1944, approximately seventy-five percent of AAF strategic missions in Europe involved some use of blind-bombing techniques. Despite the implementation of new equipment only a little over one-third of the bombs fell within 1000 feet of the target. Leaders knew about the results, but felt the effort must be continued to prevent important sectors of German industry from getting a respite. The AAF would continue to

<sup>41</sup>Craven and Cate, *Army Air Forces in World War II* 3: 13-18.

<sup>42</sup>Headquarters, European Theater of Operation, U.S. Army Release No. 8231, 28 December 1943, Box 9A, Anderson Papers.

<sup>43</sup>Craven and Cate, *Army Air Forces in World War II* 3: 17.

improve and perfect its techniques through experience.<sup>44</sup> AAF accuracy was still better than the RAF's record for area raids at this time.<sup>45</sup> Civilian casualties from radar attacks were incidental rather than planned. An important distinction must be made between American intent and effect. Spaatz continued to seek more accurate radar sets, and lamented late in 1944 that "our air war is becoming a radar war."<sup>46</sup> The AAF held so much confidence in these non-visual techniques that the tactical Ninth Air Force employed them for close-support missions while work continued to lessen the danger to Allied positions when targets were very close.<sup>47</sup> Development also continued on strategic uses, with eventual success. Equipped with new Eagle radars and special training in the last seven weeks of the war, the 315th Wing managed to obtain results with radar bombings on Japanese oil refineries that were ninety-eight percent as accurate as visual means.<sup>48</sup>

Close cooperation with the British, a growing lack of industrial targets, pressure for greater results, and the lure of *Todesstoss* all made area bombing more attractive to American airmen as the war continued. But most still believed it was not as efficient as precision bombing and did not have public support. Some leaders feared terror bombing would tarnish the Air Force image, while Stimson's and Lovett's pressure against such raids influenced others.

All these elements affected air operations after the invasion of Europe. By mid-July 1944 Arnold began to feel that a well-timed strike by ground or air units would destroy the "increasingly shaky structure" of German resistance.<sup>49</sup> Although he and General Laurence S. Kuter, assistant chief of air staff for plans, saw some promise of weakening German morale with air attacks concentrated on one or two cities, Spaatz and Anderson envisioned widely dispersed raids on many targets to impress civilians in rural towns with Allied might.<sup>50</sup> About the same time the British Air Ministry prepared a memorandum which proposed attacking

<sup>44</sup>*Ibid.*, 667-68.

<sup>45</sup>Hastings, *Bomber Command*, 329-32.

<sup>46</sup>Letter from Spaatz to Giles, Chief of Air Staff in Washington, 15 December 1944, in Anderson Diary, Anderson Papers, a file containing bound packets of each day's correspondence passing in or out of his USSTAF headquarters.

<sup>47</sup>Memo from Anderson to Drs. John Trump and David Griggs, Advisory Specialist Group, 15 December 1944, Anderson Diary.

<sup>48</sup>Wilbur H. Morrison, *Point of No Return* (New York, 1979), 267-68.

<sup>49</sup>Letter from Kuter to Anderson, 20 July 1944, Anderson Diary.

<sup>50</sup>Letter from Anderson to Kuter, 27 July 1944, *ibid.*

German civilian morale with a massive RAF/AAF assault on Berlin.<sup>51</sup> At AAF headquarters this idea produced “diverse reactions,” most of them negative. Kuter echoed Spaatz’s fears when he wrote to Anderson, “we should consider whether the recent buzz-bomb attacks have not instilled in the British government a desire for retaliation in which American air units will be called upon to share with RAF Bomber Command the onus for the more critical features of night area bombing.” He reiterated that American policy had been to bomb military and industrial targets. Apathy and discouragement created by morale bombing “are not the qualities to pressure revolt,” and people in the Nazi police state were not in a position to influence national will as much as in a democracy. “Furthermore,” he added, “it is contrary to our national ideals to wage war against civilians.” AAF headquarters found several other aspects of the British plan unacceptable. Contrary to Anderson’s opinions, Kuter thought that “attacks against impressed labor of non-German origin are unsound.” In regard to strikes against civilians, he added: “We do not want to kill them—we want to make them think and drive them to action.”<sup>52</sup>

During this period AAF leaders seemed to feel that although a contingency plan was preferable, the time had not yet come for *Todesstoss*. The supreme allied commander, General Dwight D. Eisenhower, no doubt influenced by the British air chief marshall, Sir Arthur Tedder, overruled them. “While I have always insisted,” Eisenhower told Spaatz on August 28, 1944, “that U.S. Strategic Air Forces be directed against precision targets, I am always prepared to take part in anything that gives real promise to ending the war quickly.”<sup>53</sup> Despite Spaatz’s protests, Eisenhower ordered plans for a large RAF/AAF raid on Berlin, which the Psychological Warfare Division of SHAEF (Supreme Headquarters Allied Expeditionary Forces) later denounced as too terroristic.<sup>54</sup> American air crews shared Spaatz’s disdain for the long and dangerous Berlin missions. Typical complaints in a June survey included that the city “is not a military target,” and “I don’t believe in spite bombing.”<sup>55</sup> In mid-September the

<sup>51</sup>Memo from Anderson to Spaatz, 17 August 1944, *ibid*.

<sup>52</sup>Letter from Kuter to Anderson, 15 August 1944, *ibid*.

<sup>53</sup>Eisenhower to Spaatz, 28 August 1944, Personal Diary, August 1944, Box 15, Spaatz Papers.

<sup>54</sup>Craven and Cate, *Army Air Forces in World War II* 3: 638-39; Schaffer disagrees and, considering his extensive research, is probably correct.

<sup>55</sup>“Survey of Combat Crews in Heavy Bombardment Groups in ETO,” Research Branch, Special Service Division, HQ ETO, June 1944, 11, Official Diary, June 1944, Box 18, Spaatz Papers.

Combined Chiefs of Staff deferred a British proposal to endorse morale bombing after Admiral William Leahy, Roosevelt’s chief military advisor, said it would be a mistake to “record” such a decision.<sup>56</sup> This appeared to be a diplomatic way to avoid both offending the British and endorsing a distasteful proposition. These recommendations and a lack of fighter escorts postponed any such assault on Berlin until 1945. By then AAF planners had redefined American targets to include transportation facilities and government areas more susceptible to precision tactics. The density of the city resulted in high civilian casualties and since the raid occurred close to the one on Dresden, it contributed to the ensuing controversy over whether the AAF was adopting terror tactics.<sup>57</sup>

At the time the Berlin attack, Operation Thunderclap, was being formulated, Spaatz wrote Lovett in early October that he had “started the development of a plan for the full-out beating up of Germany with all the Air Forces at our disposal.” “To my mind,” he stated, “it represents the only means of terminating the war this year with our forces.”<sup>58</sup> The concept of one massive daylight effort to end the war coincided with Arnold’s and Eisenhower’s desires, and sought “to impress the German high command with the might and destructive power of Allied air power.” Although Spaatz still believed that oil was the most critical and vulnerable target system in Germany, limited capabilities of the RAF Bomber Command and the Tactical Air Forces diverted attention to the German transportation system.<sup>59</sup>

The shift to targeting transportation facilities signified a change in AAF priorities, more than a change in doctrine. Although transportation systems had been low on the list of precision bombardment objectives, many in SHAEF believed that widespread attacks might collapse the German economy and assist the tactical situation as well. The final operation based on Spaatz’s plan, Clarion, also incorporated earlier USSTAF ideas on morale attacks. A memo submitted to General Kuter in early September summed up these positions: “It is believed that a great many comparatively small attacks in relatively virgin areas of Germany would have more of the desired effect than a series of annihilation attacks on a few communities.” It was recommended

<sup>56</sup>Minutes, Joint Chiefs of Staff, 176th Meeting, 14 September 1944, Combined Chiefs of Staff Decimal File, Box 179, Papers of the United States Joint Chiefs of Staff, RG 218.

<sup>57</sup>Craven and Cate, *Army Air Forces in World War II* 3: 725-26.

<sup>58</sup>Letter from Spaatz to Robert A. Lovett, 1 October 1944, in Anderson Diary.

<sup>59</sup>Cable U68773 from Spaatz to Arnold, 1 October 1944, *ibid*.

that small numbers of aircraft attack precision targets such as machine shops and communications facilities in rural areas. Because of more scattered defenses in those areas, bombers could fly at lower altitudes, allowing greater accuracy, better visibility and a chance for most of the population to see the invincibility of Allied air power. The memo ended: "Though it will be regrettable if circumstances force the adoption of civilian morale as a primary target, the form of attack advocated herein will be both the most acceptable and the one most likely to succeed."<sup>60</sup> These tactics were acceptable because they would limit civilian casualties and increase the effect on morale.

This morale bombing reflected the philosophy of Seversky more than Douhet; it is much different to terrorize a civilian by attacking a nearby train or bridge than to purposefully try to kill him. While morale loss remained a secondary objective, the primary focus was to cripple transportation. Nonetheless, many AAF officers strongly opposed the operation. Eaker feared that civilian casualties would convince the German people that Americans were the barbarians portrayed by Nazi propaganda. He told Spaatz: "You and Bob Lovett are right and we should never allow the history of this war to convict us of throwing the strategic bomber at the man in the street." General Charles Cabell, the USSTAF director of plans, pencilled on his copy of the plan for Clarion, "This is the same old baby killing plan of the get-rich-quick psychological boys, dressed up in a new kimono."<sup>61</sup> But Spaatz decided to give the plan a try even though, unlike most other AAF leaders, he had given up "following the chimera of the one air operation which will end the war." He told General Arnold that he expected the attack to paralyze German transportation for several days.<sup>62</sup> On February 22 the weather cleared enough to leave most of Germany vulnerable, and for two days strategic and tactical bombers pummeled German railroads.<sup>63</sup> The heavy

<sup>60</sup>Memo from Col. Charles G. Williamson to Kuter, 4 September 1944, *ibid.* Williamson was the former USSTAF Plans Director and U.S. Military Air Advisor to the European Advisory Commission.

<sup>61</sup>Eaker to Spaatz, 1 January 1945, Personal Diary, January 1945, Box 20, Spaatz Papers; "General Plan for Maximum Effort Attack against Transportation Objectives," 17 December 1944, File 168.7026-9, April 1944-January 1945, C. P. Cabell Personal File, SHRC.

<sup>62</sup>Spaatz to Arnold, 5 February 1945, Personal Diary, February 1945, Box 20, Spaatz Papers.

<sup>63</sup>Anderson and Spaatz believed that heavy attacks on rail transport would force the depletion of additional oil reserves by making the Germans rely more on their road network. A good description of the vulnerability of the German network is in a G-2 Report to Spaatz on 16 September 1944, Anderson Diary. Situation

bombers could fly at lower altitudes and in smaller groups which allowed them to pinpoint attacks in a broader area with more accuracy and fewer civilian casualties. But the lack of serious damage to either morale or the economy caused Portal and the Joint Intelligence Committee to recommend total suspension of the operations. Tedder and Spaatz disagreed and to this day studies differ radically in their assessments of Clarion. Schaffer argues vehemently that Clarion was a terror attack, citing, among other items, instructions to a briefing officer which emphasized that the attack, striking throughout Germany, would provide "a deterrent for the initiation of future wars." Yet even this was considered a side effect. The reports from participating units concentrate on the destruction of railways and rolling stock; none mention morale targets or effects.<sup>64</sup>

AWPD/1 recognized that large transportation objectives such as marshalling yards, because of their dispersed nature and easy reconstruction, required repeated area bombing.<sup>65</sup> Area bombardment differed from attacks on major urban zones. Still, the selection of such an objective within a city usually resulted in increased civilian casualties. In American formation bombing techniques all planes dropped their loads simultaneously with the lead bombardier, covering a wide zone. While this tactic maximized defensive capabilities and chances of hitting the objective, it also produced a bomb pattern as dispersed as the formation. Strategists reasonably expected that most bombs would fall on or near the target, but results were never as precise as articles on the home front claimed. An example of the deadly effect of formation bombing on a target within a major city occurred a week prior to Clarion during the American raid on Dresden, planned in conjunction with massive British night area bombardments. Poor visibility over the target, in part due to smoke from the many fires started by the RAF, compounded errors. Melden Smith provides a detailed study of the decision-making process leading to the raid, laying much of the blame on Churchill and the confusion over Russian requests for support, in

maps for Clarion reflect that 45 marshalling yards, 33 railroad stations, 55 bridges, 2 viaducts, and 2 benzol plants were bombed. Situation maps, 22-23 February 1945, Map Room 300, Section 18, Box 148, Map Room Files, Franklin D. Roosevelt Library, Hyde Park, N.Y.

<sup>64</sup>Craven and Cate, *Army Air Forces in World War II* 3: 639, 732-35. F. L. Anderson to Orville Anderson, 2 March 1945, and messages UAX 64905, D 1933, D61872, and M47480, 1 March 1945, Anderson Diary.

<sup>65</sup>"Army and Navy Estimate of United States Overall Production Requirements," 11 September 1941, Tab 2, Section 2, Part 3, App. 2, p. 4, Joint Army-Navy Board File 355, Serial 707, RG 225.

addition to the fact that Dresden coincided with other 'Thunderclap' proposals. Despite later reports to the contrary, the city did contain important industrial and transportation targets.<sup>66</sup> News-paper accounts emphasized the communications and industrial characteristics of Dresden and the support the attack gave to the Russians. They did not mention civilian casualties;<sup>67</sup> the American press did not gloat over such figures the way British reporters sometimes did.

At a press conference after the raid, however, an Associated Press reporter misinterpreted the remarks of the briefing officer, and the ensuing dispatch caused nationwide headlines like "Terror Bombing gets Allied Approval as Step to Speed Victory." Arnold called Spaatz immediately when he saw it because the release contradicted previously announced policies. Anderson explained that the report had exaggerated the briefing officer's statements and had never been cleared by censors. He reiterated that the USSTAF's mission remained to destroy Germany's ability to wage war, and the Air Force did not consider attacks on transportation centers terror attacks. "There has been no change in policy," he added. "There has been only a change of emphasis in locale."<sup>68</sup>

Despite AAF fears of U.S. public reaction to the terror bombing announcements, none came. Americans at home accepted such tactics if they would help end the war. In reality, while the new policy showed no change in the USSTAF commitment against direct bombing of civilian areas, the AAF no longer selected targets to assure minimum casualties. With the lack of good industrial targets and the lure of *Todesstoss*, U.S. military opposition to area bombing weakened as the war dragged on.

Another supposed sign of this change came from growing AAF support for use of "war-weary" B-17s, stripped of armor and armament, and loaded with ten tons of explosives. Not surprisingly, Arnold was the primary advocate of this project; he saw no difference between these robot planes and British night area bombing.<sup>69</sup> But field commanders used more caution and

<sup>66</sup>Melden E. Smith Jr., "The Bombing of Dresden Reconsidered: A Study in Wartime Decision Making" (Ph.D. diss., Boston University, 1971), 208-209, 237-47.

<sup>67</sup>*New York Times*, 15 February 1945, 1.

<sup>68</sup>Melden Smith, "The Bombing of Dresden," 70-78.

<sup>69</sup>Letter from Arnold to Spaatz, 23 November 1944, Anderson Diary. Arnold wanted to deploy them all over Germany to terrorize the populace with the uncertainty of where they would hit next. This letter was written after the completion of preliminary testing, however, and even Arnold had to concede that the war-weary airplanes would probably be more of an irritant than a decisive weapon to break German morale.

discrimination in their use of radio-controlled bombers. Hardened V-1 sites provided the initial objective; priority later shifted to submarine pens.<sup>70</sup> The AAF also conducted tactical tests to assist ground forces with attacks on fortified areas.<sup>71</sup> This utilization of the aircraft persuaded Admiral Leahy, who had earlier considered them "an inhuman and barbarous type of warfare with which the United States should not be associated," to change his mind.<sup>72</sup> There appears to have been little enthusiasm for the project outside the Joint Chiefs of Staff. Air commanders thought the war-wearies too vulnerable and ineffective for strategic missions. Their ground counterparts expressed reservations about safety on tactical missions, as war-wearies endangered friendly troops along the robots' flight path.<sup>73</sup> British fear of German retaliation called a final halt to the project; USSTAF and SHAEF showed little resistance to that decision.<sup>74</sup>

\*

As the strategic air campaign in Europe drew to a close, the focus moved to the Pacific. The same forces and precedents

<sup>70</sup>Cables UX67648 and U67658 from Spaatz to Arnold, 6 September 1944, in Anderson Diary.

<sup>71</sup>Message from Spaatz to Arnold, 21 November 1944; letter from Spaatz to Arnold, 10 December 1944; cable W76001 from Arnold to Eisenhower, 12 December 1944, all in Anderson Diary.

<sup>72</sup>Minutes, Joint Chiefs of Staff 190th Meeting, 8 February 1945, Combined Chiefs of Staff File 373.11 Germany (11-4-44), Box 591, Papers of the United States Joint Chiefs of Staff, RG 218.

<sup>73</sup>Cable from James H. Doolittle (8th Air Force CO) to Spaatz, 12 November 1944; cable from Hoyt S. Vandenberg (9th Air Force CO) to Spaatz, 22 November 1944; letter from Spaatz to Arnold, 10 December 1944; cable S71437 from Eisenhower to Arnold, 18 December 1944. Results of tactical tests are summed up in "Plan, Willie Orphan Project - Phase B," from Col. Alfred R. Maxwell to Anderson, 14 November 1944; Maxwell's final recommendation is for rejection of the whole project. All these items are in the Anderson Diary. Strategic flaws are covered in "Final Report, Aphrodite Project," File 527.431A, 1 January 1945, SHRC.

<sup>74</sup>Craven and Cate, *Army Air Forces in World War II* 3: 727. Their fears no doubt increased when a fully equipped robot crash-landed virtually intact behind enemy lines during a deep penetration mission on December 5. Gear feared captured included the radio sets which enabled the drone to receive commands from the mother ship that guided it, and television equipment that allowed the operator on the mother ship to direct the war-weary onto its target. Cable UAX51395, 13 December 1944, Anderson Diary. For details on the US-GB dispute over war-weary deployment, see CCS File 373.11 Germany (11-4-44), Papers of the US JCS, RG 218. For more complete coverage of this project, see Conrad Crane, "The Strange Career of WEARY WILLIE," to be published in *Aerospace Historian*.

involved in the assault on Germany influenced aerial bombardment of Japan, but more than just distance separated the two theaters of operations. Americans held disparate perceptions of the Japanese and Germans. President Roosevelt thought American troops felt more hatred toward the Japanese than the Germans.<sup>75</sup> At one point he even approved a project to attack Japan with bats carrying small incendiary bombs; planners thought this approach would be effective against bamboo houses as well as the superstitious natures of their occupants.<sup>76</sup> Fighting in the Pacific theater was particularly ferocious. Japanese soldiers and civilians committed hari-kari rather than surrender, and thought it just as shameful for their enemies to surrender. Americans retaliated when the Japanese mutilated and killed captives; "not since the French and Indian War had American troops been so brutal." While combatants offered no truces in combat, American troops committed no atrocities against civilians.<sup>77</sup> General MacArthur had the most restrictive policy anywhere on air attacks in the Philippines. Bombing of any target "located within inhabited areas of cities and barrios or sufficiently close thereto to endanger such areas by the operations contemplated" had to be cleared through his headquarters.<sup>78</sup>

Air strategy against the Japanese homeland was to be the same as in Europe.<sup>79</sup> Brigadier General Haywood Hansell, one of Arnold's top planners and a prime advocate of precision bombing doctrine, took command of the Twenty-first Bomber Command and set out to put his theories into practice. The results were dismal. Atrocious weather, poor visibility and the two-hundred-mile-an-hour jet stream between B-29 bases in the Marianas and Tokyo made navigation and storms unpredictable. The winds exceeded the limitations of both bombardiers and bombsights.<sup>80</sup>

<sup>75</sup>Stimson Diary, 31 December 1944.

<sup>76</sup>Joe Michael Feist, "Bats Away" *American Heritage* 33 (April-May 1982): 93-94.

<sup>77</sup>William Manchester, *The Glory and the Dream* (New York, 1975), 268-69.

<sup>78</sup>Brig. Gen. B. M. Fitch to Commander, Allied Air Forces, 1 November 1944, File 373.11 South West Pacific Area, Box 41, RG 332, Modern Military Field Branch, NA, Suitland, Md.

<sup>79</sup>Sherry cites General George Marshall's threat to bomb Japanese cities, voiced shortly before Pearl Harbor, as a sign of abandonment of precision bombing principles, but Marshall's noted biographer Forrest Pogue points out that this was in contradiction to another statement made ten days earlier. The later remark probably was intended as a deterrent to anticipated Japanese aggression without any real intent behind it. See Pogue, *George C. Marshall: Ordeal and Hope, 1939-1942* (New York, 1966), 202-203.

<sup>80</sup>Martin Caidin, *A Torch to the Enemy* (New York, 1960), 58-60.

Many of the B-29 crews arrived believing in the effectiveness of radar bombing techniques supposedly perfected in Europe, but they soon reached new conclusions. The bombing had little effect on Japanese production due to the dispersion of cottage industries as well as the woeful inaccuracy of high-explosive bombs. Some experimental fire bombing raids which Arnold ordered on dock areas showed success, but Hansell refused to abandon his belief in precision doctrine. Arnold relieved him from command in February 1945 and replaced him with Major General Curtis LeMay.<sup>81</sup>

Initially LeMay also tried daylight precision attacks, hoping that better organization and training would improve results. Many planners on Arnold's staff, wishing to exploit the psychological effects of the loss of the Philippines and further demoralize the Japanese people, recommended an incendiary assault on industrial centers. Even precision advocates like Anderson could see no alternative to area raids. But pinpoint attacks on aircraft engine factories retained first priority in Arnold's directives; LeMay alone decided to switch methods. He took a great gamble with revolutionary tactics and did not even inform Arnold of the new plans until the day before the first fire mission. He stripped his planes of defensive armament to allow them to carry a heavier bomb load and brought them in at night for surprise and at low altitude for accuracy. Results were spectacular and soon Arnold's staff constructed a new list of industrial sectors within cities for priority targets. LeMay still used some precision attacks on small targets like isolated aircraft factories, but emphasis changed to the more productive area raids.<sup>82</sup>

Newspaper reports of the raids, like Air Force intelligence on bombing results, concentrated on the physical damage from the attacks rather than on civilian deaths. Articles on the first Tokyo raid are typical. They note the heavy population density of the area but emphasize that in the fifteen square miles destroyed, "eight identifiable industrial targets lie in ruins along with hundreds of other industrial plants." One LeMay quote mentions thousands of "home industries" destroyed. Accounts do not estimate civilian casualties but proclaim that the many thousands made homeless posed an immense refugee problem for the Japanese government. Deaths are not mentioned, and of course there are no pictures of the destruction, just maps of the destroyed zone.<sup>83</sup>

<sup>81</sup>Craven and Cate, *Army Air Forces in World War II* 5: 551-567.

<sup>82</sup>*Ibid.* 568-76, 608-26, 646-52.

<sup>83</sup>*New York Times*, 11 March 1945, 1, 13.

Fire raids marked another stage in the evolution of total war and represented the culmination of trends started in the air war against Germany. Although target selection late in the European campaign showed less effort taken to avoid civilian casualties, LeMay's planning ignored such considerations altogether. His intelligence officers advised him that massive fires were essential in order to jump the fire breaks around factories. Non-combatant deaths were unavoidable in order to destroy Japanese industry and forestall an invasion of Japan, which LeMay feared would cost half a million American lives.<sup>84</sup> While areas of industrial concentrations remained primary targets, the concept of workers as belligerents which had surfaced in European combat once again justified civilian casualties. American leaders did not view Japanese society as a police state or one containing impressed workers. All Japanese participated in manufacturing for the war effort, often in their homes. LeMay defended his raid on Tokyo by writing:

We were going after military targets. No point in slaughtering civilians for the mere sake of slaughter. Of course, there is a pretty thin veneer in Japan, but the veneer was there. It was their system of dispersal of industry. All you had to do was visit one of those targets after we'd roasted it, and see the ruins of a multitude of tiny houses, with a drill press sticking up through the wreckage of every home. The entire population got into the act and worked to make those airplanes or munitions of war . . . men, women, children. We knew we were going to kill a lot of women and kids when we burned that town. Had to be done.<sup>85</sup>

LeMay also emphasized that, whenever possible, populations were warned to evacuate. The intent was to disrupt industry without killing everyone. Refugees clogged roads and caused the Japanese government immense relocation problems. One successful psychological warfare operation involved dropping leaflets which named a number of Japanese towns as potential bomb sites and recommended that they be evacuated. "At the height of the campaign, more than six and one-half million Japanese were involved in leaving their cities—many from cities never touched."<sup>86</sup>

This aspect of morale exploitation incorporated a plan that had been rejected for use in Europe, another sign of the intensifi-

<sup>84</sup>Curtis LeMay with MacKinlay Kantor, *Mission with LeMay* (Garden City, N.Y., 1965), 351-52.

<sup>85</sup>*Ibid.*, 384.

<sup>86</sup>Col. Robert L. Gleason, "Psychological Operations and Air Power," *Air University Review* 22 (March-April 1971): 36-37.

cation of the Japanese campaign.<sup>87</sup> When Spaatz transferred to the Pacific theater after V-E Day, he was appalled by the fire bombing. He confided in his diary, "I never have favored the destruction of cities as such with all inhabitants being killed."<sup>88</sup>

LeMay wrote in April that he believed that he had the resources to destroy the enemy's ability to wage war within six months.<sup>89</sup> Other airmen envisioned a swift *Todesstoss* to demoralize the enemy. Some AAF leaders, amazed when the bombings failed to force Japan's collapse, could no longer estimate when the war would terminate. In Europe it had been fairly obvious when the end of war approached and targets disappeared, but in Japan attacks had to continue in preparation for the invasion of the home islands. Resistance remained fanatic and the Japanese people seemed prepared to die for the emperor. American battle casualties dramatically increased as the average monthly rate of loss quadrupled to nearly 13,000. The desperate fighting on Okinawa during the spring and early summer foreshadowed the consequences of invasion. Leaders pursued any idea that held hope of speeding victory and reducing losses. Generals Marshall and MacArthur favored the use of poison gas and the Joint Chiefs of Staff advocated destruction of the Japanese rice crop. The results of fire raids did not look as unconscionable when compared to projections of American casualties during an invasion. Indeed the incendiary attacks seemed a "revolting necessity." That very effort may have been decisive. Prince Konoye later claimed, "Fundamentally, the thing that brought about the determination to make peace was the prolonged fire bombing by the B-29s."<sup>90</sup>

<sup>87</sup>Kuter proposed the plan in his August 15, 1944 letter to Anderson. (See note 52.)

<sup>88</sup>Spaatz Personal Diary, 11 August 1945, Box 21, Spaatz Papers.

<sup>89</sup>LeMay, *Mission with LeMay*, 373. Sherry portrays LeMay as being very unsure of when the war would end when Arnold questioned him in June 1945, but he greatly oversimplifies the incident. A more accurate presentation is in Morrison, *Point of No Return*, 247-48. Sherry also argues that firebombing was designed to slow production by destroying the city around factories since the bombers could not hit the factories themselves; this is also a misrepresentation. Sherry, "Slide to Total War," 25.

<sup>90</sup>The Journals of David E. Lilienthal: Vol. 2, *The Atomic Energy Years, 1945-1950* (New York, 1964), 199-200. Arnold's journal on his Pacific trip, 6 June 1945-24 June 1945, entry for 17 June 1945, Box 272, Arnold Papers; JCS Memo, "Destruction of 1946 Crops in Japan," 30 May 1945, ABC File 475.92 (25 February 1944) Sec 1-B, RG 165. George C. Marshall, H. H. Arnold and Ernest J. King, *The War Reports* (New York, 1947), 275. Charles F. Brower IV, "Assault or Siege: The Debate over Final Strategy for the Defeat of Japan, 1943-1945," *Joint Perspectives* 2 (Spring 1982): 80. Craven and Cate, *Army Air Forces in World War II* 5: 756.

The incendiary bombings of Japanese cities set the stage for the use of the atomic bomb—the culmination of “the slide to total war” of the American strategic bombing campaign. Precision bombing practices, especially in Europe, must be seen as an attempt to halt, or at least slow, the rush to unlimited warfare. Although efficiency more than ethics provided the basis of AAF doctrine, a limitation on the “uncurbed bestial instincts” of warfare emerged. It also resulted from a subtle interplay between military and public perceptions of strategic bombing, affected by newspaper reports, press releases and bombing assessments.<sup>91</sup> The desired accuracy, which many believed achievable, could not yet be attained with the tactics and equipment available. American airmen did the best they could with what they had, but theory exceeded technology. Objective observers could still detect a definite difference between AAF strategic bombing and the British area raids on cities or the German “Blitz” on London.

Sanctions restricting the bombing of civilians eroded as the war entered its complex final phases, and pressure increased for the Allies to achieve their stated aim of winning the war “as decisively and speedily as possible.”<sup>92</sup> This was especially evident in the campaign against Japan, when AAF leaders increased the intensity of the fire raids in the belief that they provided the best chance to end the war quickly and cheaply, demonstrate a true “victory through airpower,” and secure a strong position to bargain for postwar status as an independent service. Civilian deaths were never a direct objective of AAF attacks, but avoiding such casualties became less and less a consideration. Perhaps the culmination of this trend is best exemplified by the message Gen. Lauris Norstad sent to Spaatz in the Pacific on August 8, 1945:

It is understood that the Secretary of War in his press conference tomorrow will release a map or photostat of Hiroshima showing the

<sup>91</sup>These bombing assessments may have been misleading. Reports and pictures of individual missions concentrated on target destruction; bombing errors were rarely described and never pictured. In addition, more intelligence could be obtained on sorties conducted under conditions conducive to accuracy; the same bad weather or cloud cover that necessitated “blind-bombing” techniques or increased errors also negated effective photographic reconnaissance of damage. This may have led to a belief in exaggerated capabilities for precision. The amazed reaction of most Americans when they visited bombed areas after the war seems to confirm this. Good examples of bombing assessment reports are the monthly summaries in Box 6 of the Anderson Papers; the daily reports on individual missions are in his diary.

<sup>92</sup>United States Chiefs of Staff memorandum, read at a meeting of Combined Chiefs of Staff on May 13, 1943, State Department, *Foreign Relations of the United States: The Conferences at Washington and Quebec, 1943*, 222.

aiming point and the general area of greatest damage. . . . It is believed here that the accuracy with which this bomb was placed may counter a thought that the CENTERBOARD (A-Bomb) project involves wanton, indiscriminate bombing.<sup>93</sup>

If an atomic bomb dropped on a city is construed as a method of precision bombing, then precision bombing no longer took civilian casualties into account. Yet we should not make hasty moral judgments on the men who firebombed Tokyo and dropped the atomic bomb. As distinguished British historian Michael Howard has observed, when statesmen and their generals deal with the ethical issues of a war threatening their people and nation “the options open to them are likely to be far more limited than is generally realized.” And leaders’ problems are much more complex in an era of total war and nuclear weapons. The issues of law, physics and airpower ethics which men like Anderson and Arnold expressed and every AAF leader faced, are all part of what Bill Moyers has called “the great unresolved dilemma of our age: Will we go on doing what our weapons make possible?”<sup>94</sup>

<sup>93</sup>Lauris Norstad to Spaatz, MSG 082328Z, 8 August 1945, Personal Diary, August 1945, Box 21, Spaatz Papers.

<sup>94</sup>Michael Howard, *Studies in War and Peace* (New York, 1970), 239; Bill Moyers at the conclusion of “The Arming of the Earth,” an episode in his 1984 PBS series, “A Walk Through the 20th Century with Bill Moyers.”